

**REMARKS**

The Final Office Action dated January 11, 2006, has been reviewed and the Examiner's comments carefully considered. Prior to this paper, claims 1-13 were pending. By this paper, Applicant does not cancel or add any claims. Therefore, claims 1-13 remain pending.

Applicant respectfully submits that the present application is in condition for allowance for at least the reasons that follow.

**Allowance of Claims**

Applicant thanks Examiner Wachtel for allowing claims 3, 4, 7, 12 and 13.

**Interview of April 10, 2006**

Examiner Wachtel is thanked for extending the courtesy of an interview to Applicant's representatives on April 10, 2006, where it was agreed that claim 1 and the claims that depend therefrom are neither anticipated nor obvious in view of EP 0 973 219 (EP '219), for at least the reasons briefly described below.

In view of the interview held on April 10, 2006, Applicants submit that above statement, along with the following, provides a complete and proper recordation of the substance of the interview, per MPEP §713.04: Applicant's representative detailed various reasons why the device of EP '219 does not anticipate or render obvious the device of claim 1, such as, for example, the deficiencies of the prior art with respect to controlling a ratio as recited, the deficiencies of elements 6 and 7 of EP '219 with respect to the mixer recitations, etc.

Applicants sincerely thank Examiner Wachtel for extending the courtesy of the interview.

**Claim Rejections Under 35 U.S.C. §§102/103**

In the Office Action, claims 1, 2, 5 and 8-11 are rejected under 35 U.S.C. §102(a) or, in the alternative, under 35 U.S.C. §103(a) being unpatentable over EP 0 973 219 (EP '219). Applicant respectfully traverses the rejection as to the claims above, and submit that these claims are allowable for at least the following reasons.

**The Cited References Do Not Teach / Suggest All Claim Recitations**

Both §102 and §103 require a showing that all recitations are present in the cited references, albeit with respect to the latter in at least in a suggestive manner, in order to reject a claim. As was agreed during the interview of April 10, 2006, this is not the case with respect to EP '219, even when construing the apparatus claims broadly. That is, the device taught in EP '219 is not capable of meeting the recitations of any pending apparatus claim.

For example, apparatus claim 1, and thus the claims that depend therefrom, recite a fuel reforming system comprising “a fuel reformer for generating a reformed gas containing hydrogen by using a gas containing vapors of a gas fuel or a liquid fuel and a gas containing oxygen, a mixer of vapors of the gas fuel or the liquid fuel and the gas containing the oxygen, a supplier of vapors of the gas fuel or the liquid fuel into said fuel reformer through the mixer . . . *wherein a ratio of the first flow rate of the vapors to the second flow rate of the gas is corrected depending on the output of said temperature detector, and the gas containing the oxygen is supplied depending on the corrected ratio.*” (Emphasis added.)

The Office Action relies on the combination of vaporization device 7 and combustion device 6 of EP '219 to satisfy the recitation of a mixer of vapors and the gas. This cannot be

the case and still meet the recitations regarding the “ratio” highlighted above. This is because vaporization device 7 and combustion device 6 are fluidically isolated from one another. That is, combustion device 6 does not exchange fluids with vaporization device 7; the contact between them, heat exchanger 12, being for the transfer of heat from the combustion device to presumably provide thermal energy to the vaporization device 7 to “power” the vaporization device 7. This differentiation also prevents EP ’219 from rendering any apparatus claim unpatentable when either combustion device 6 or vaporization device 7 are presumed to individually be a mixer.

Because vaporization device 7 and combustion device 6 are fluidically isolated, the recitations regarding correction of the ratio of the first flow rate of the vapors to the second flow rate of the gas are not present, as the teachings of EP ’219 regarding air-fuel ratios (A/F) are directed towards managing the inflow of flammable gas and combustion aid gas into combustion device 6, and not directed towards managing the flow of vapors and/or gas as recited in claim 1.<sup>1</sup> Thus, claim 1 and its dependencies are allowable for at least this reason.

\* \* \* \* \*

The claims of the present invention are allowable for additional reasons. The teachings of EP ’219 are directed towards providing a control apparatus/method configured to control a reformat fuel temperature to a desired temperature suitable for the reforming reaction. In contrast, the invention of claim 1 permits fuel reforming to be accomplished in a mobile fuel cell system capable of obtaining a reformed gas composition usable in a fuel cell even if a vapor temperature supplied from the evaporator into the fuel reformer significantly varies. (See, for example, page 7, lines 5-10.) That is, in contrast to the teachings of EP ’219, the device of claim 1 may free the system from a need to control temperature.

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<sup>1</sup> At paragraph 0031, EP ’219 teaches that A/F is “the ratio of the flammable gas amount to be consumed for *heating* the reformat fuel and the amount of combustion aid gas for *burning* the flammable gas.” (emphasis added.) This is yet further evidence that the ratios taught in EP ’219 relate to ratios pertaining to combustor device 6.

In summary, EP '219 does not teach or suggest each and every element of claim 1, or any claim that depends therefrom, and thus these claims are allowable.

Lack of Suggestion or Motivation to Modify or Combine the References

In the Office Action, claims 1, 2, 5, 6, 8, 9, 10 and 11 are rejected in the alternative as being obvious. As detailed above, the third requirement of MPEP § 2143 (that the prior art teach or suggest all claim limitations) is not satisfied by EP '219. The first requirement of MPEP § 2143, that “there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings,” is likewise not satisfied.

First, there is no rationale proffered to modify the device of EP '219 to arrive at the invention of claim 1, as the above-identified deficiencies have not been addressed to-date in the prosecution history. Regardless, Applicant does not see any reason why one of ordinary skill would have been motivated to modify the teachings of EP '219 to arrive at claim 1. Second, it is respectfully submitted that the ordinary artisan would not have been motivated to modify EP '219 to, for example, place the combustor device 6 into fluid communication with the vaporizer device 7 and to correct a ratio of vapor to gas based on an output of a temperature detector that detects the temperature of at least one of the vapor, the gas, and a mixture of vapor and gas, as EP '219 emphasizes the importance of balancing the A/F ratio to control combustion temperature, and the ordinary artisan would have believed that so modifying the device of EP '219 would make it more difficult to control combustion temperature, as the ratio of any vapor to gas would now be controlled based on additional factors, such as temperature of the vapor, gas, and/or mixture.

\* \* \* \* \*

MPEP § 2143.01, subsection 6 states that “the proposed modification cannot change the principle of operation of a reference – If the proposed modification or combination of the

prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810 (CCPA 1959).” In *Ratti*, the CCPA held that the “suggested combination of references would require a substantial reconstruction and redesign of the elements shown in the primary reference.” This substantial redesign would have resulted in changing a rigid seal to a resilient seal. Thus, a reference cannot be modified to render an invention obvious if the modification changes a principle of operation of the reference.

With the above in mind, it is respectfully submitted that since the teachings of EP '219, which rely on the principle of operation of simply utilizing the combustor device 6 to power the vaporization device 7, with the two devices not in fluidic communication with each other, modifying the device of EP '219 to place these components into fluidic communication would change the principle of operation of EP '219. Since so modifying EP '219 changes the principle of operation of EP '219, just as changing the rigid seal to a resilient seal was found to change the principle of operation in *Ratti*, “the teachings of [EP '219] are not sufficient to render the claims *prima facie* obvious.” (MPEP § 2143.01, emphasis added.)

\* \* \* \* \*

In summary, because of the lack of suggestion or motivation in the prior art to modify the reference, the first requirement of MPEP § 2143 has not been met and, hence, a *prima facie* case of obviousness has not been established.

### Conclusion

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a

check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Examiner Wachtel is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

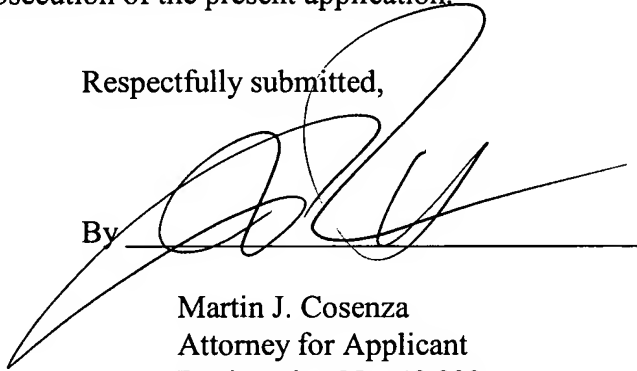
Respectfully submitted,

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